CLAIMS

We claim:

1. A targeting construct comprising:

   (a) a first polynucleotide sequence homologous to at least a first portion of an FPR-RS4 gene;

   (b) a second polynucleotide sequence homologous to at least a second portion of the FPR-RS4 gene; and

   (c) a selectable marker.

2. A method of producing a targeting construct, the method comprising:

   (a) providing a first polynucleotide sequence homologous to at least a first portion of an FPR-RS4 gene;

   (b) providing a second polynucleotide sequence homologous to at least a second portion of the FPR-RS4 gene;

   (c) providing a selectable marker; and

   (d) inserting the first sequence, second sequence, and selectable marker into a vector to produce the targeting construct.

3. A cell comprising a disruption in an FPR-RS4 gene.

4. The cell of claim 3, wherein the cell is a murine cell.

5. The cell of claim 4, wherein the murine cell is an embryonic stem cell.

6. A non-human transgenic animal comprising a disruption in an FPR-RS4 gene.

7. The non-human transgenic animal of claim 6, wherein the transgenic animal is a mouse.

8. A cell derived from the transgenic mouse of claim 7.

9. A method of producing a transgenic mouse comprising a disruption in an FPR-RS4 gene, the method comprising:

   (a) introducing the targeting construct of claim 1 into a cell;

   (b) introducing the cell into a blastocyst;

   (c) implanting the resulting blastocyst into a pseudopregnant mouse, wherein said pseudopregnant mouse gives birth to a chimeric mouse; and

   (d) breeding the chimeric mouse to produce the transgenic mouse.

10. A method of identifying an agent that modulates the expression or function of an FPR-RS4 gene, the method comprising:

(a) providing a non-human transgenic animal comprising a disruption in an FPR-RS4 gene;

(b) administering an agent to the non-human transgenic animal; and

(c) determining whether the expression or function of the disrupted FPR-RS4 gene in the non-human transgenic animal is modulated.

11. A method of identifying an agent that modulates the expression or function of an FPR-RS4 gene, the method comprising:

(a) providing a cell comprising a disruption in an FPR-RS4 gene;

(b) contacting the cell with the agent; and

(c) determining whether the expression or function of the FPR-RS4 gene is modulated.

12. The method of claim 11, wherein the cell is derived from the non-human transgenic animal of claim 6.

13. An agent identified by the method of claim 10 or claim 11.

14. A transgenic mouse comprising a disruption in an FPR-RS4 gene, wherein there is no significant expression of the FPR-RS4 gene in the transgenic mouse.

15. A transgenic mouse comprising a homozygous disruption in an FPR-RS4 gene, wherein the transgenic mouse exhibits increased anxiety.

16. The transgenic mouse of claim 15, wherein the increased anxiety is characterized by decreased time spent in a central region of an open field test.

17. A transgenic mouse comprising a homozygous disruption in an FPR-RS4 gene, wherein the transgenic mouse exhibits impaired motor coordination or balance or ataxia.

18. The transgenic mouse of claim 17, wherein the transgenic mouse exhibits a decrease in performance on an accelerating rotarod.

19. The transgenic mouse of claim 18, wherein the transgenic mouse falls off the accelerating rotarod at a lower speed relative to a wild-type mouse.

20. A transgenic mouse comprising a homozygous disruption in an FPR-RS4 gene, wherein the transgenic mouse exhibits a decreased susceptibility to seizure.

21. The transgenic mouse of claim 20, wherein the mouse exhibits seizure-like responses at a higher dose of Metrazol, relative to a wild-type mouse.

22. A cell derived from the transgenic mouse of claim 14.

23. A method of identifying an agent that ameliorates a phenotype associated with a disruption in an FPR-RS4 gene, the method comprising:

(a) administering an agent to a transgenic mouse comprising a disruption in an FPR-RS4 gene; and

(b) determining whether the agent ameliorates at least one of the following phenotypes: increased anxiety, impaired motor coordination or balance, ataxia, or decreased susceptibility to seizure.

24. An agent identified by the method of claim 23.

25. An agonist or antagonist of FPR-RS4.

26. Phenotypic data associated with a transgenic mouse comprising a disruption in an FPR-RS4 gene, wherein the phenotypic data is in an electronic database.

27. A method of treating anxiety, the method comprising administering to a subject in need a therapeutically effective amount of FPR-RS4.

28. A method of treating impaired motor coordination, impaired balance, or ataxia, the method comprising administering to a subject in need a therapeutically effective amount of FPR-RS4.

29. A method of identifying an agent that ameliorates anxiety, the method comprising:

(a) administering an agent to the transgenic mouse of claim 15; and

(b) determining whether the agent has an affect on anxiety in the transgenic mouse.

30. A method of identifying an agent that ameliorates impaired motor coordination, impaired balance, or ataxia, the method comprising:

(a) administering an agent to the transgenic mouse of claim 17; and

(b) determining whether the agent has an affect on motor coordination, balance or ataxia in the transgenic mouse.

31. A method of evaluating treatments for anxiety, the method comprising:

(a) administering a therapeutic agent to the transgenic mouse of claim 15; and

(b) determining the *in vivo* effects of the agent on anxiety level in the transgenic mouse..

32. A method of evaluating treatments for impaired motor coordination, impaired balance, or ataxia, the method comprising:

(a) administering a therapeutic agent to the transgenic mouse of claim 17; and

(b) determining the *in vivo* effects of the agent on motor coordination, balance, or ataxia in the transgenic mouse.

33. A method of identifying an agent that inhibits the activity or function of FPR-RS4, the method comprising:

(a) providing a cell expressing FPR-RS4;

(b) contacting the cell with an agent; and

(c) determining whether the agent inhibits the activity or function of FPR-RS4, wherein the agent has an affect on seizure susceptibility.

34. A pharmaceutical composition comprising a FPR-RS4 protein.